State Revolving Fund Loan Programs
Drinking Water, Wastewater, Nonpoint Source

ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT

TOWN OF BATTLE GROUND
WWTP Rehabilitation, New Effluent Line/Outfall, Main Lift Station Replacement
SRF PROJECT WW 10 08 79 01

DATE: March 7, 2012

TARGET PROJECT APPROVAL DATE: April 6, 2012

I. INTRODUCTION

The above entity has applied to the Clean Water State Revolving Fund (SRF) Loan Program for a loan to finance all or part of the wastewater project described in the accompanying Environmental Assessment (EA). As part of facilities planning requirements, an environmental review has been completed which addresses the project's impacts on the natural and human environment. This review is summarized in the attached EA, which can also be viewed at http://www.in.gov/ifa/srf/.

II. PRELIMINARY FINDING OF NO SIGNIFICANT IMPACT (FNSI)

The SRF Clean Water Program has evaluated all pertinent environmental information regarding the proposed project and determined that an Environmental Impact Statement is not necessary. Subject to responses received during the 30-day public comment period, and pursuant to Indiana Code 4-4-11, it is our preliminary finding that the construction and operation of the proposed facilities will result in no significant adverse environmental impact. In the absence of significant comments, the attached EA shall serve as the final environmental document.

III. COMMENTS

All interested parties may comment upon the EA/FNSI. Comments must be received at the address below by the target approval date above. Significant comments may prompt a reevaluation of the preliminary FNSI; if appropriate, a new FNSI will be issued for another 30-day public comment period. A final decision to proceed, or not to proceed, with the proposed project shall be effected by finalizing, or not finalizing, the FNSI as appropriate. Comments regarding this document should be sent within 30 days to:

Max Henschen
Senior Environmental Manager
State Revolving Fund
100 N. Senate Ave. IGCN 1275
Indianapolis, IN 46204
317-232-8623; mhensche at ifa.in.gov

ENVIRONMENTAL ASSESSMENT

I. PROJECT IDENTIFICATION

Project Name and Address:	**WWTP Rehabilitation, New Effluent Line/Outfall, Main Lift Station Replacement** Town of Battle Ground P.O. Box 303 Battle Ground, IN 47920
SRF Project Number:	WW 10 08 79 01
Authorized Representative:	Steve Egly, Town Council President

II. PROJECT LOCATION

Battle Ground is located approximately 4.5 miles north of Lafayette, in Tippecanoe County; see Figure 1. The Wastewater Treatment Plant (WWTP) and Main Lift Station are approximately 0.25 miles apart and are located in Tippecanoe Township in the Brookston USGS 7.5' quadrangle, Township 24N, Range 4W, SW ¼ Section 23; see Figure 2.

III. PROJECT NEED AND PURPOSE

Battle Ground's WWTP is deteriorated and the town has had discharge permit violations. The town and the Indiana Department of Environmental Management (IDEM) entered into an Agreed Order in May 2010. In December 2010, the IDEM approved a compliance plan listing milestone dates for WWTP construction. The town needs to expand and rehabilitate the WWTP to address extensive cracking in the aeration tanks, the lack of screening to remove floatables and plastics, undersized final clarifiers, a substandard laboratory, equipment that has exceeded its useful service life and National Pollutant Discharge Elimination System permit violations.

The Main Lift Station was installed in 1972 and serves Battle Ground's historic district and outlying areas. Failures have caused sewage backups in the wastewater system and overflows into Burnett's Creek. The lift station equipment is aged and parts are increasingly expensive and difficult to acquire. In addition, the Main Lift Station does not have emergency power capability.

Rehabilitating and expanding the WWTP will prevent further deterioration and violation of State and Federal regulations. Replacing the Main Lift Station will avoid increasingly frequent and costly maintenance and prevent sewage backups and overflows.

IV. Project Description

The WWTP rehabilitation and expansion project includes installing a primary screening structure, replacing the vertical tank walls in the aeration basins, installing a new aeration splitter box, new aeration blowers and coarse bubble diffusers, two new final clarifiers, two recycled activated sludge (RAS) pumping stations, waste activated sludge (WAS) pumping station, UV disinfection system, effluent metering, post-aeration structure, a new effluent line, replacing the outfall to Burnett Creek, closing and filling the polishing pond, installing an emergency generator, and building a new laboratory building with associated pumping station; see Figure 3.

The Main Lift Station replacement includes a new wet well, valve vault, pumps, valves, controls, and emergency generator; see Figure 4.

V. Estimated Project Costs, Affordability and Funding

A. Selected Plan Estimated Cost Summary

WWTP Construction and Equipment Costs	
Primary Screening Structure	$162,000
Aeration Basin Splitter Box	$12,690
Aeration Basin Walls	$50,000
Aeration Blowers	$54,000
Aeration Course Bubble Diffusers	$54,000
Final Clarifiers	$570,000
RAS Pumping Stations	$90,000
WAS Pumping Stations	$36,000
UV Disinfection System	$120,000
Effluent Metering	$22,000
Post-Aeration Structure	$10,000
Decommission/Fill Polishing Pond	$48,000
Replacement of Outfall	$10,500
Laboratory Building	$77,500
Site Demolition	$136,000
Site Preparation	$135,000
Site Piping	$275,000
Electrical/Instrumentation	$370,000
Emergency Generator	$35,400
WWTP Construction and Equipment Subtotal	*$2,268,100*
Contingencies	*$226,810*
WWTP Estimated Construction Cost	***$2,495,000***

Main Lift Station Construction and Equipment Costs	
Lift Station and Valve Vault Structures	$68,000
Pumps	$27,000
Lift Station Piping/Valves	$36,000
Electrical/Instrumentation	$50,000
Sanitary Manholes	$8,500
Sanitary Sewer Piping	$3,500
PVC Force Main	$7,500

Emergency Generator	$24,000
Abandonment of Existing Facilities	$10,800
Site Work	$33,000
Layout/Mobilization and Demobilization	$13,520
Main Lift Station Construction and Equipment Subtotal	*$281,800*
Contingencies	*$28,180*
Main Lift Station Estimated Construction Cost	***$310,000***
Total (WWTP + Main Lift Station) Estimated Construction Cost	**$2,805,000**
Non-construction Costs	
Aeration Basin Inspection	$6,000
Environmental Review	$10,200
Topographic Survey	$18,700
Engineering Design	$199,500
Bidding Assistance	$10,000
Construction Observation	$26,500
Construction Inspection	$150,000
Preliminary Engineering Report	$12,500
Geotechnical Engineering	$7,350
Floodway Permit	$5,425
Accounting	$36,000
Legal	$45,000
Main Lift Station Engineering & Construction Inspection	$70,000
WWTP + Main Lift Station Non-Construction Subtotal	***$597,175***
Total (WWTP + Main Lift Station) Estimated Project Cost	**$3,402,175**

B. Battle Ground will finance the WWTP and Main Lift Station projects with a loan from the SRF Program for a 20-year term at an annual fixed interest rate to be determined at loan closing. Monthly user rates and charges may need to be analyzed to determine if adjustments are needed for loan repayment.

VI. Description of Evaluated Alternatives

A. WWTP rehabilitation: Battle Ground rejected the "No Action" alternative, since it would not resolve the equipment problems at the WWTP and would result in enforcement action by regulatory agencies and possible fines and penalties.

Aeration Tank Walls: Besides the "No Action" alternative, Battle Ground evaluated: (1) replacing the aeration tanks with an oxidation ditch; (2) repairing the cracks in the existing tank walls; and (3) repairing the cracks in the existing tank walls and increase the height. Although the oxidation ditch met desired criteria, Battle Ground lacks the land to construct and maintain the plant in operation. Repairing the cracks would be sufficient, but by increasing the water level in the tanks, future expansion could be achieved with no additional volume required. The recommended alternative is to repair the walls and raise the wall height.

Debris Removal: Besides the "No Action" alternative, Battle Ground evaluated: (1) fine screens; (2) coarse screens; and (3) a macerator. Fine screens will remove grit and floatables but will become easily clogged with large debris. Macerators will break apart the large floatables and plastics but will

not remove them. Course screens would remove the floatables and plastic and reduce maintenance. Installation of coarse screens is the selected alternative.

Polishing Pond: Besides the "No Action" alternative, Battle Ground evaluated: (1) adding a cover to the pond; (2) converting the pond to flow equalization; and (3) closing and filling the pond. Adding a cover would prevent duckweed and algae from growing, which would help issues upstream of the proposed UV disinfection. However, the current plant process no longer requires the polishing pond, so the alternative of converting it to influent flow equalization was evaluated. This option was ultimately ruled out because Battle Ground desires to keep the footprint of the expansion within the existing plant. Formally closing the pond will allow new structures to be constructed on commercial fill within the closed polishing pond. The recommended alternative is to close and fill the polishing pond.

Effluent Metering: Besides the "No Action" alternative, Battle Ground evaluated: (1) Parshall flume; and (2) mag meter. The Parshall flume provides more flexibility and ensured accuracy and is the selected alternative.

B. Main Lift Station. The town rejected the "No Action" alternative for improving the Main Lift Station, since its condition would continue to deteriorate, requiring more frequent and costly maintenance; sewage backups and sanitary sewer overflows into Burnett Creek would still be a possibility. Besides the "No Action" alternative, Battle Ground evaluated: (1) eliminating the lift station and installing a gravity sewer line; (2) rehabilitating the lift station; and (3) replacing the lift station. Installing a gravity sewer from the lift station to the treatment plant would require costly pumping at the WWTP. While lift station rehabilitation would result in similar results as replacement, it would be very difficult to maintain operation of the system during construction, and bypass pumping would be costly. A new lift station on available land adjacent to the existing station would maintain service during construction and is the cost-effective, selected alternative.

VII. Environmental Impacts of the Feasible Alternatives

A. Direct Impacts of Construction and Operation

Undisturbed/Disturbed Land: The proposed WWTP and lift station projects will be constructed on disturbed land. Installation of the 540-foot long effluent line will require an excavation width of about three feet in a 30-foot cleared corridor through a wooded area; the trench will be backfilled and the site restored to pre-construction elevations.

Structural Resources (Figures 5, 6, & 7): Construction and operation of the project will not alter, demolish or remove historic properties. If any visual or audible impacts to historic properties occur, they will be temporary and will not alter the characteristics that qualify such properties for inclusion in or eligibility for the National Register of Historic Places. The SRF's finding pursuant to the Section 106 of the national Historic Preservation Act is: "no historic properties affected."

Plants and Animals: The required 30-foot easement along the proposed effluent line alignment will require clearing approximately six trees over 6-inches diameter at breast height.

Prime Farmland: The proposed project will affect 0.16 acre of prime farmland.

Wetlands (Figure 2): Burnett Creek is a riverine wetland and will be affected by outfall installation. The wetland on the east side of the existing WWTP site is the polishing pond, proposed to be closed and filled as part of this project.

100-Year Floodplain (Figures 3 & 9): Although the FEMA flood insurance rate map shows the 100-year floodplain bisecting the WWTP site, a detailed elevation survey showed that the entire WWTP site, existing and proposed, is actually outside the 100-year floodplain level of 560.5 feet, as shown by the green line on Figure 3. A portion of the proposed lift station force main is located within the floodplain, but will not displace floodwaters.

Surface Waters: The proposed project will not adversely affect waters of high quality listed in 327 IAC 2-1-2(3), exceptional use streams listed in 327 IAC 2-1-11(b), Natural, Scenic and Recreational Rivers and Streams listed in 312 IAC 7-(2), Salmonid Streams listed in 327 IAC 2-1.5-5(a)(3), or waters on the Outstanding Rivers List (Natural Resources Commission Non-rule Policy Document).

Groundwater: Construction of the project will not affect groundwater quality or quantity.

Air Quality: Dust and noise will be produced during construction activities.

Open Space and Recreational Opportunities: The proposed effluent line will cross a footpath that is part of the northernmost section of the Wabash Heritage Trail that follows Burnett Creek from Battle Ground to Lafayette. Effluent line and outfall construction will cause only a temporary interruption to that portion of the trail. The proposed project's construction and operation will neither create nor destroy open space and recreational activities.

National Natural Landmarks: The construction and operation of the proposed project will not affect National Natural Landmarks.

B. Indirect Impacts

The town's Preliminary Engineering Report (PER) states: *The construction of the proposed improvements is not expected to cause development growth in the service area. The Town of Battle Ground, through the authority of its council, planning commission or other means, will ensure that future development, as well as future collection system or treatment works projects connecting to SRF-funded facilities will not adversely impact archaeological/historical/structural resources, wetlands, wooded areas, or other sensitive environmental resources. The Town will require new development and treatment works projects to be constructed within the guidelines of the U.S. Fish and Wildlife Service, IDNR, IDEM, and other environmental review authorities.*

C. Comments from Environmental Review Authorities

The U.S. Fish and Wildlife Service, in correspondence dated September 21, 2011, stated:

These comments are consistent with the intent of the National Environmental Policy Act of 1969, the Endangered Species Act of 1973, and the U. S. Fish and Wildlife Service's Mitigation Policy.

Most of the [effluent line] *route is through forested and partially forested areas in the riparian zone of Burnett Creek. We recommend that the effluent line route be designed to avoid or minimize removal of native hardwood trees.*

Endangered Species

*The proposed project is within the range of the federally endangered Indiana bat (*Myotis sodalis*), clubshell mussel (*Pleurobema clava*) and fanshell mussel (*Cyprogenia stegaria*). The project is also within the range of 3 mussel species that are proposed for the federal endangered species list: the sheepnose (*Plethobasus cyphyus*), rayed bean (*Villosa fabalis*) and snuffbox (*Epioblasma triquetra*)* [SRF note: the rayed bean and snuffbox mussel were formally added to the federal list of endangered species list as of March 1, 2012. *All mussel species are found in the Tippecanoe River, and there is no habitat for them in the project area.*

Indiana bats hibernate in caves, then disperse to reproduce and forage in relatively undisturbed forested areas associated with water resources during spring and summer. Recent research has shown that they will inhabit fragmented landscapes with adequate forest for roosting and foraging. Young are raised in nursery colony roosts in trees, typically near forested drainageways in undeveloped areas.

There is suitable summer habitat for this species along the forested Burnett Creek corridor, and there is a recent record a few miles away along the Tippecanoe River. To our knowledge the area of the project site has not been surveyed. The project will not eliminate enough habitat to affect this species, but to avoid incidental take from removal of an occupied roost tree we recommend that tree-clearing be avoided during the period April 1 – September 30. If this measure is implemented we concur that the proposed project is not likely to adversely affect this listed species.

This precludes the need for further consultation on this project as required under Section 7 of the Endangered Species Act of 1973, as amended. If project plans are changed significantly, please contact our office for further consultation.

The Natural Resources Conservation Service, in correspondence dated January 27, 2010, stated: *The proposed project to upgrade and expand the wastewater treatment plant and replace the existing lift station in the Town of Battle Ground, Tippecanoe County, Indiana, as stated in your letter dated January 21, 2010, will cause a conversion of prime farmland.*

The IDNR Division of Historic Preservation and Archaeology, in correspondence dated March 7, 2011, stated: *Pursuant to IC 13-18-21 and 327 IAC 14 and Section 106 of the National Historic Preservation Act (16 U.S.C. § 470f) and 36 C.F.R. Part 800, the Indiana State Historic Preservation Officer ("Indiana SHPO") is conducting an analysis of the materials...for the...project in Battle Ground, Tippecanoe County, Indiana.*

Please be aware that the Tippecanoe Battlefield (archaeological site 12T784) is located nearby the proposed project area and is a National Historic Landmark. Site 12T784 must be avoided by all project activities. Please be advised that as a battlefield, this area is highly sensitive and may contain burials outside the currently known boundaries of the site.

Please be aware of the cemetery development plan requirements in Indiana Code 14-21-1-26.5 (http://www.in.gov/legislative/ic/code/title14/ar21/ch1.html) regarding ground disturbing activities within 100 feet of a cemetery.

Regarding page 12 of the archaeological report, in the event that artifacts or human remains are discovered during construction, the Indiana Department of Transportation (INDOT) would not need to be notified unless this proposed project is affiliated with INDOT.

Based on our analysis, it has been determined that no historic properties will be altered, demolished, or removed by the proposed project.

If any archaeological artifacts, features or human remains are uncovered during construction, state law (Indiana Code 14-21-1-27 & 29) requires that the discovery must be reported to the Department of Natural Resources within two (2) business days.

The IDNR Environmental Unit, in correspondence dated November 4, 2011, stated:
The Indiana Department of Natural Resources has reviewed the above referenced project per your request. Our agency offers the following comments for your information and in accordance with the National Environmental Policy Act of 1969.

Regulatory Assessment: *This proposal will require the formal approval for construction in a floodway under the Flood Control Act, IC 14-28-1.*

Natural Heritage Database: *The Natural Heritage Program's data have been checked. To date, no plant or animal species listed as state or federally threatened, endangered, or rare have been reported to occur in the project vicinity.*

Fish & Wildlife Comments: *Fish, wildlife, and botanical resource losses as a result of this project can be minimized through implementation of the following measures and will be a requirement of a permit.*

1. *Revegetate all bare and disturbed areas with a mixture of grasses (excluding all varieties of tall fescue), legumes, and native shrub and hardwood tree species as soon as possible upon completion.*

2. *Minimize and contain within the project limits inchannel disturbance and the clearing of trees and brush.*

3. *Do not work in the waterway from April 1 through September 30 without the prior written approval of the Division of Fish and Wildlife.*

4. *Do not cut any trees suitable for Indiana bat roosting (greater than 3 inches dbh, living or dead, with loose hanging bark) from April 1 through September 30.*

5. *Do not excavate in the low flow area except for the placement of piers, foundations, and riprap, or removal of the old structure.*

6. *Use minimum average 6 inch graded riprap stone extended below the normal water level to provide habitat for aquatic organisms in the voids.*

7. *Appropriately designed measures for controlling erosion and sediment must be implemented to prevent sediment from entering the stream or leaving the construction site; maintain these measures until construction is complete and all disturbed areas are stabilized.*

8. *Seed and protect all disturbed streambanks and slopes that are 3:1 or steeper with erosion control blankets (follow manufacturer's recommendations for selection and installation) or use an appropriate structural armament; seed and apply mulch on all other disturbed areas.*

9. *Plant five native trees, at least 2 inches in diameter-at-breast height, for each tree which is removed that is ten inches or greater in diameter-at-breast height.*

VIII. Mitigation Measures

The town's PER states:

Appropriately designed measures for controlling erosion and sediment shall be implemented to prevent sediment from entering the stream or leaving the construction site.

All bare and disturbed areas shall be restored to their pre-construction condition.

All vegetated land shall be permanently seeded and maintained as necessary until vegetation growth is established.

The clearing of trees and brush should be minimized and contained within project limits. No trees suitable for Indiana bat roosting (3-inch diameter or larger at breast height) will be cut from April 1 through September 30.

Construction and operation of the project will be implemented to minimize impact to non-endangered species and their habitat.

IX. Public Participation

A properly noticed public hearing was held on April 29, 2010 at 5:30 pm in the Battle Ground Town Hall, 100 College Street, Battle Ground IN. A question regarding post-aeration was addressed during the hearing. No written comments were received in the 5-day period following the hearing.

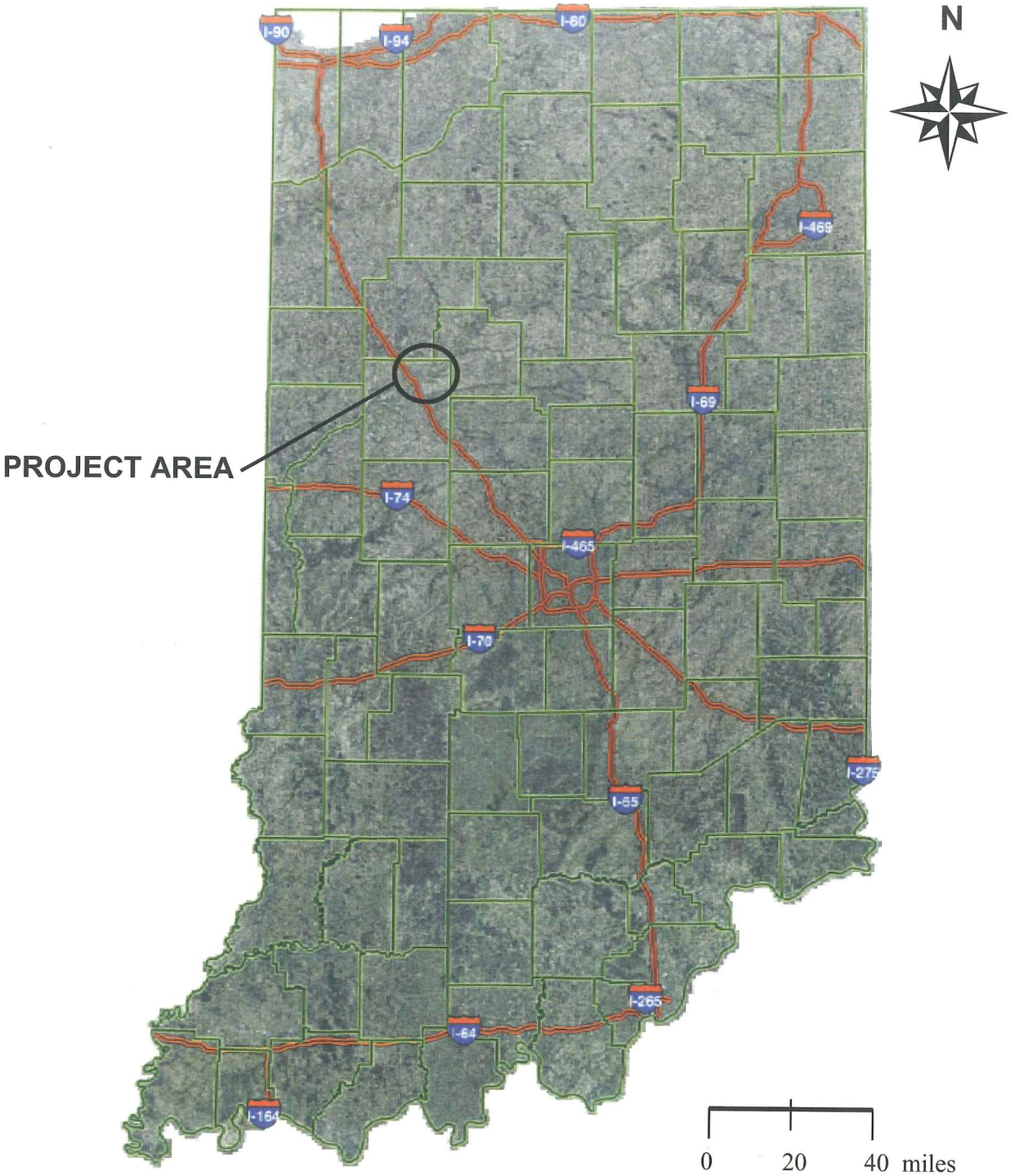


FIGURE 1

Butler Fairman Seufert
Civil Engineering Solutions for Better Communities

State Map

Waste Water Treatment Plant and Lift Station Project

Town of Battle Ground
Tippecanoe County, Indiana

Revision Date: 03/16/2011

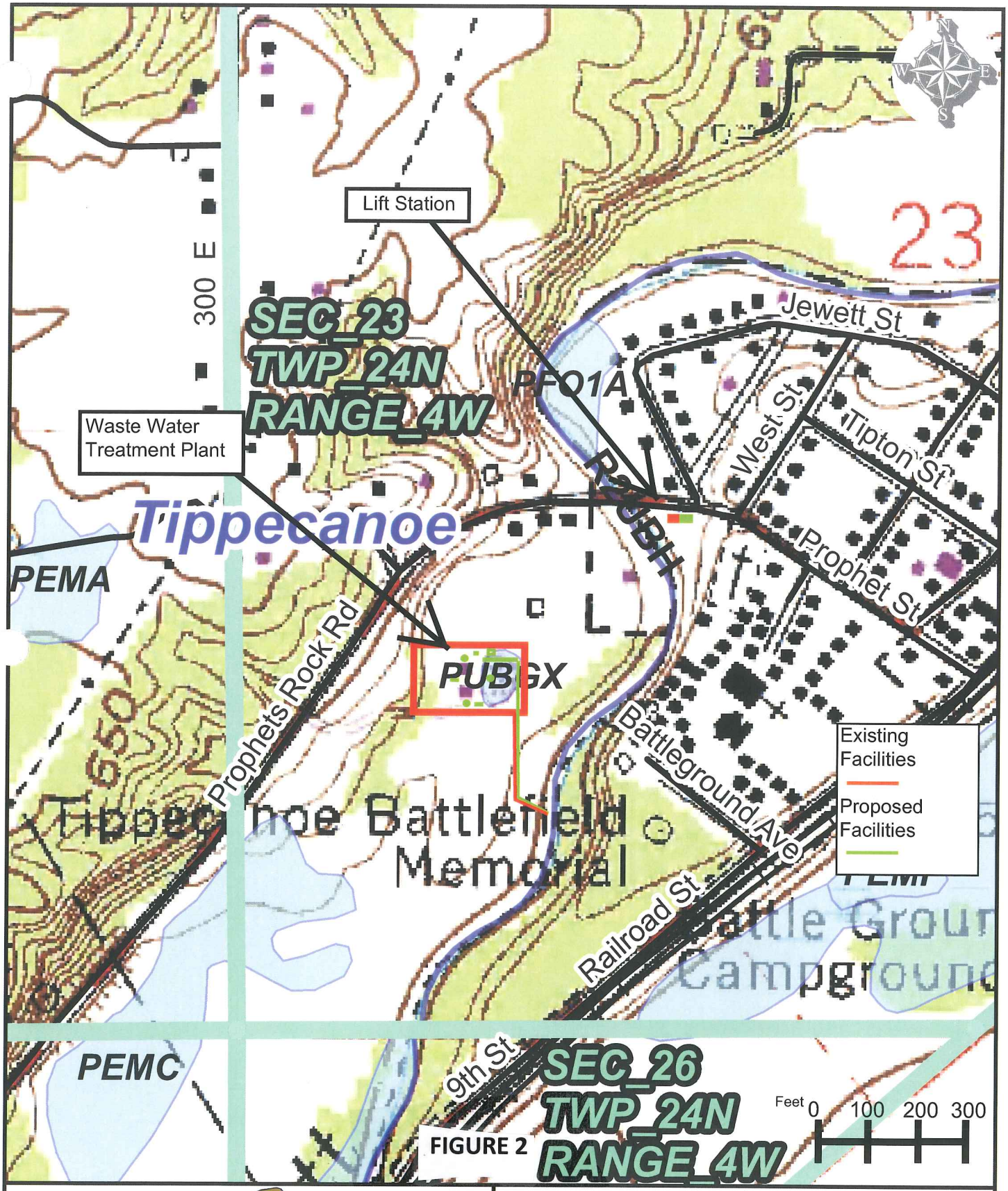
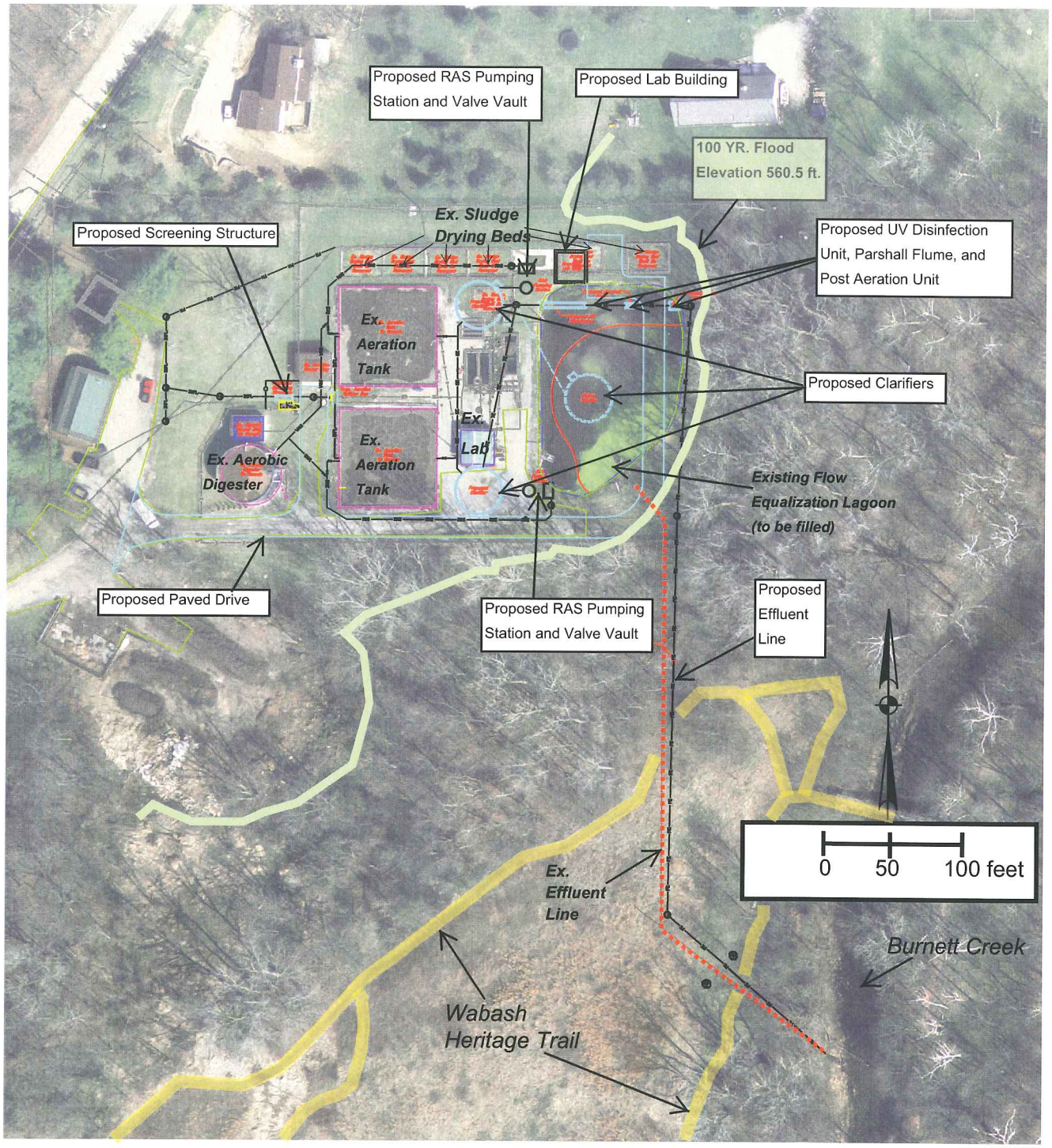


FIGURE 2

Butler Fairman Seufert
CIVIL ENGINEERS

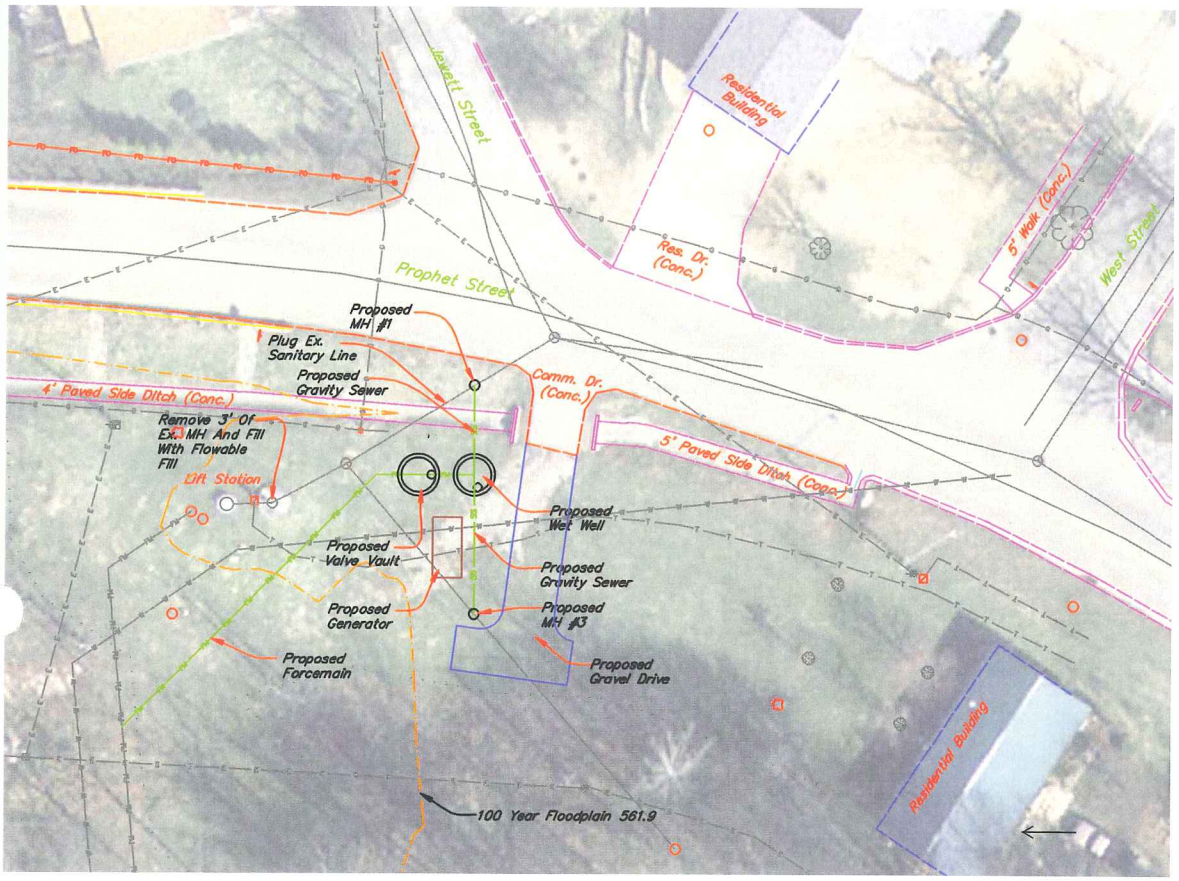
NWI (National Wetlands Inventory) Map
Waste Water Treatment Plant and Lift Station Project
USGS Brookston, IN Quadrangle
Town of Battle Ground, Tippecanoe, Indiana

Revision Date: 03/16/2011



BF&S Butler Fairman Seufert CIVIL ENGINEERS	DRAWN: RAF CHECKED: TAT DATE: 4-4-10	BATTLE GROUND WASTE WATER TREATMENT REHABILITATION PROJECT **FIGURE 3** PROPOSED WWTP SITE LAYOUT	HORIZONTAL SCALE 1" = 100' VERTICAL SCALE N/A SHEET OF PROJECT BFS NO. 4834

Revision Date: 03/16/2011



0 20 40

1 inch = 40 ft.

Butler Fairman Seufert CIVIL ENGINEERS	DRAWN: RAF CHECKED: TAT DATE: 4-4-10	BATTLE GROUND WASTE WATER TREATMENT REHABILITATION PROJECT	HORIZONTAL SCALE 1" = 40' VERTICAL SCALE N/A SHEET OF PROJECT

FIGURE 4

PROPOSED LIFT STATION SITE LAYOUT

BFS NO. 4834

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Tippecanoe Township (05001-045)

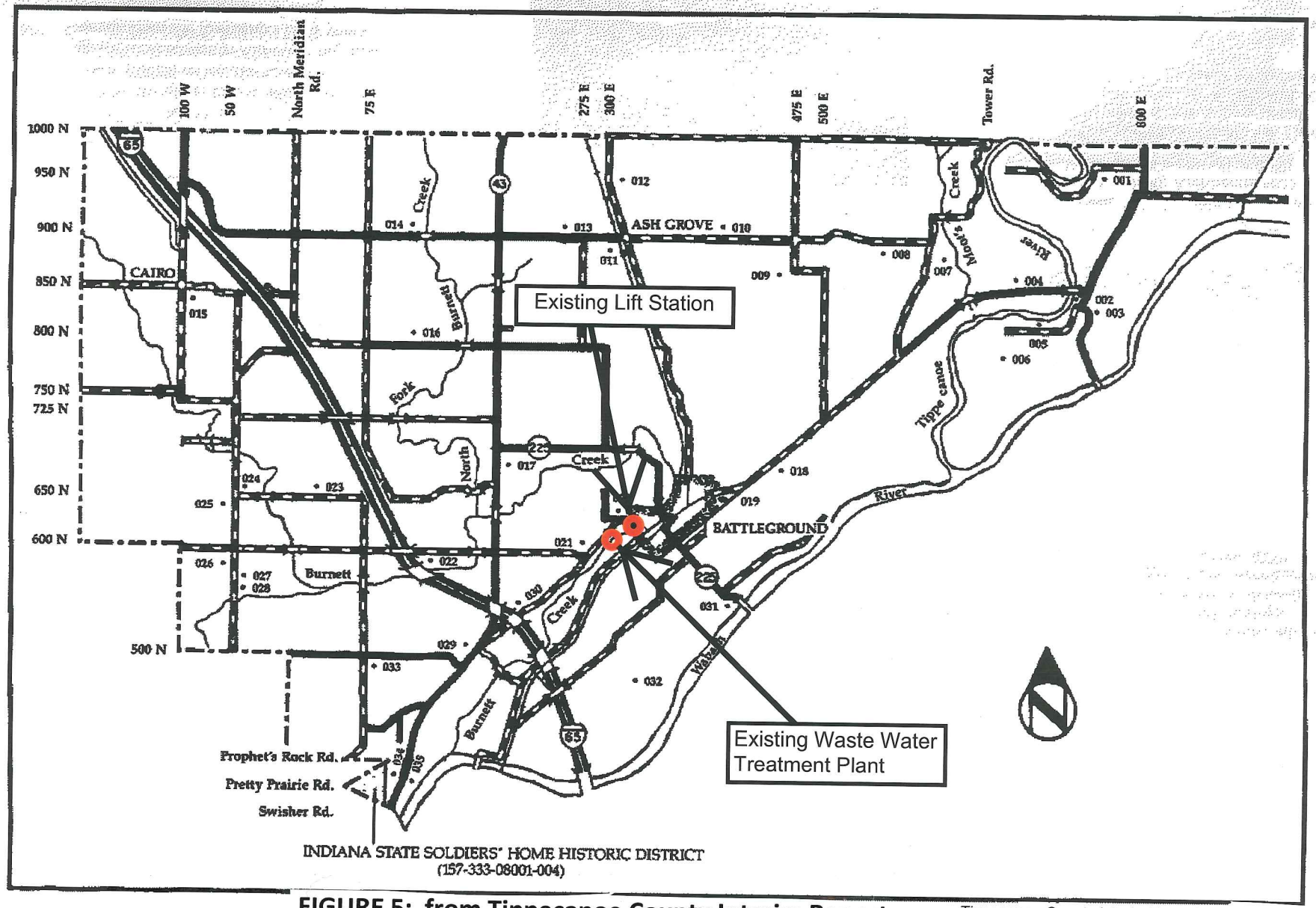
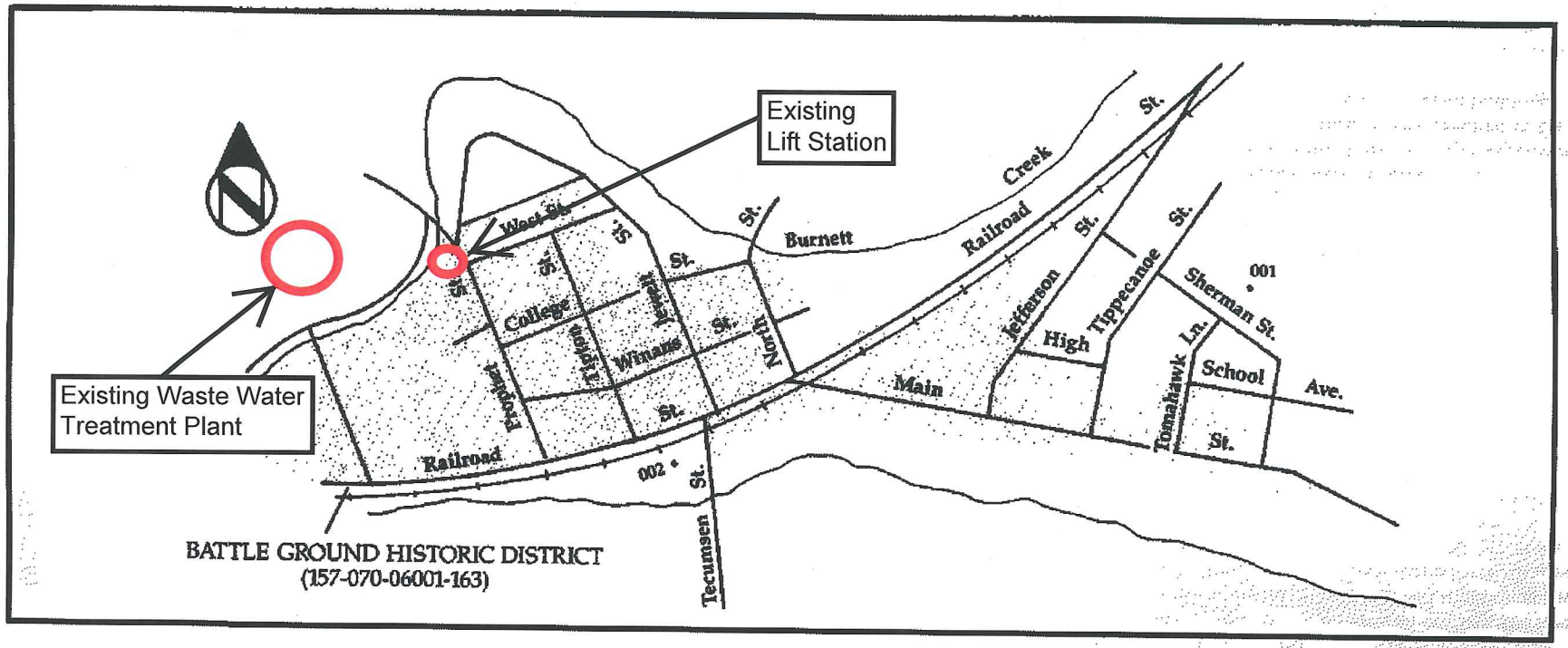


FIGURE 5: from Tippecanoe County Interim Report
Historic Sites and Structures Inventory

Tippecanoe County Interim Report

Battle Ground Scattered Sites (07001-002)



No.	Rtg.	Description
001	C	House, 300 Sherman Street; Gable-front, c.1900; Vernacular/Construction (070)
002	C	House, 110 Tecumseh Street; T-plan, c.1890; Vernacular/Construction (070)

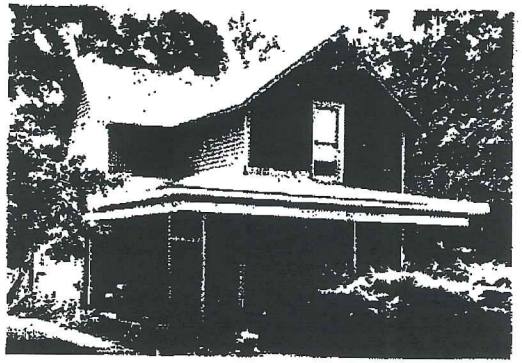


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FIGURE 6: from Tippecanoe County Interim Report
Historic Sites and Structures Inventory

Battle Ground Historic District (157-070-06001-162)

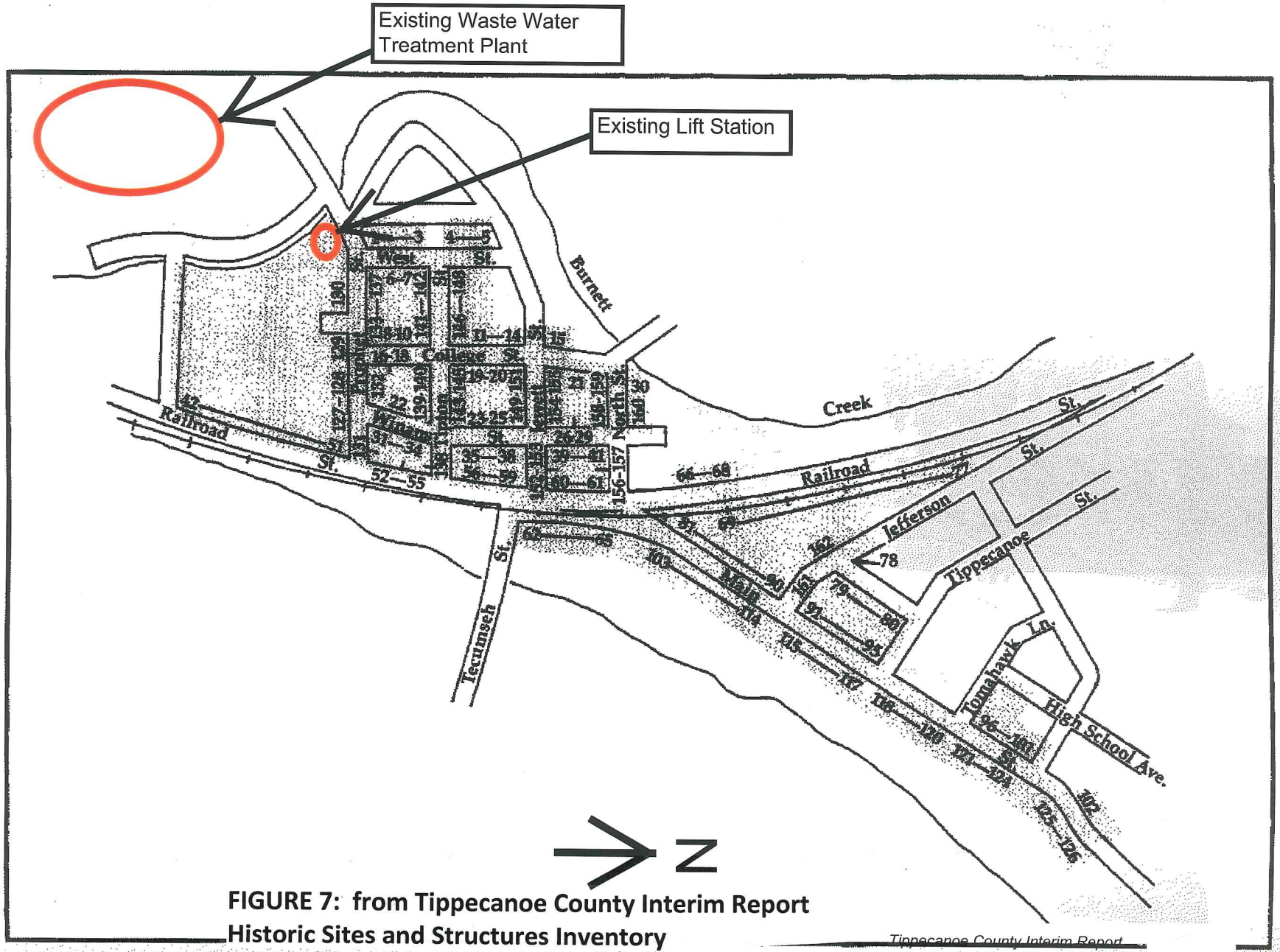

FIGURE 7: from Tippecanoe County Interim Report
Historic Sites and Structures Inventory

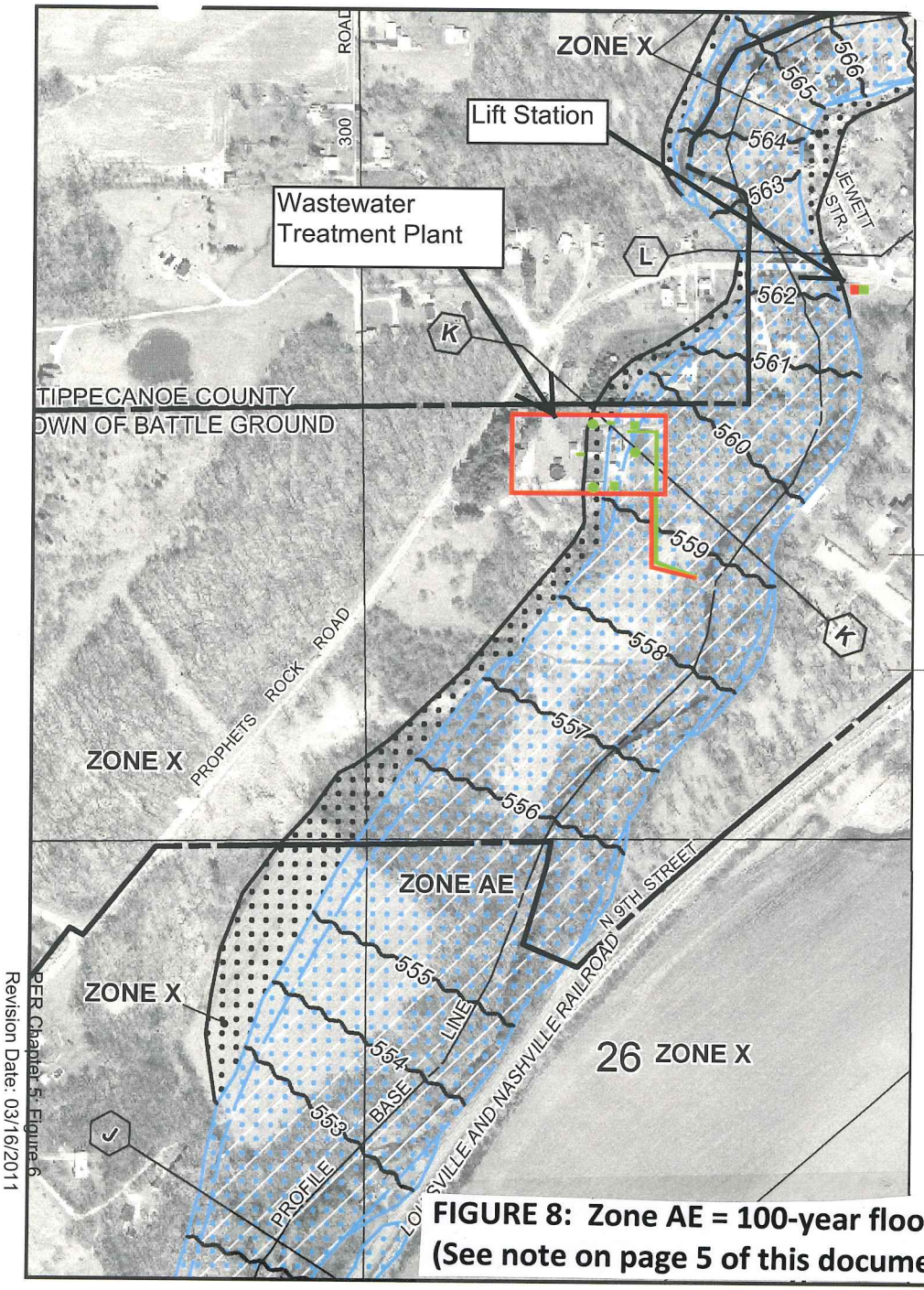

FIGURE 8: Zone AE = 100-year floodplain; (See note on page 5 of this document)

Revision Date: 03/16/2011 PER Chapter 5: Figure 6

MAP SCALE 1" = 500'

250 0 500 1000 FEET METE

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0063D

FIRM

FLOOD INSURANCE RATE MAP

TIPPECANOE COUNTY, INDIANA

AND INCORPORATED AREAS

PANEL 63 OF 380

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
TIPPECANOE COUNTY	180428	0063	D
BATTLE GROUND, TOWN OF	180252	0063	D

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER 18157C0063D

EFFECTIVE DATE SEPTEMBER 25, 2009

Federal Emergency Management Agency